

LOCAL NEWS

UC San Diego School of Medicine uses AI to predict which drugs to use to treat cancer patients

The team published a study in *Cancer Discovery* that uses artificial intelligence to predict the best treatment for cancer patients.

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SAN DIEGO — Imagine a doctor asking their phone what kind of drug they should use to treat a cancer patient. Scientists at [UC San Diego School of Medicine](#) are using Artificial Intelligence to better treat patients.

“We’re asking, ‘Dear AI, please bestow me with your wisdom on what this tumor is, how I should treat it, what drugs, it will respond to, what drugs it won’t respond to,’” said [Trey Ideker](#), PhD, Professor of Medicine, UC San Diego.

He and his team authored a [study](#) published in *Cancer Discovery* that uses artificial intelligence to predict the best treatment for cancer patients.

“As we all know, chemotherapy often doesn’t work. So the question becomes, when can you safely or at least productively treat with chemo agents of various kinds? And when might you want to consider another route?” said Ideker. “It’s a complicated question, because there are already dozens of genes that can be mutated to cause different cancer types.”

Ideker says currently many doctors are using a one gene approach, but tumors can have dozens of mutations.

“You can’t simply as a human mind hold 90 genes or 150 genes in your head at one time, you’re going to have to have an intelligent system help you do this,” said Ideker.

This AI has identified 90 genes and researchers are continuing to expand the data by feeding it examples of tumor cells and their mutations and their responses to different chemotherapies such as Cisplatin.

“Very much like, your chatGPT. But ChatGPT doesn’t do this yet. And so that’s what this this paper is really about is how do we get there?,” said Ideker.

But AI isn’t the only answer to treatment. Ideker says they’ve built trust in the system.

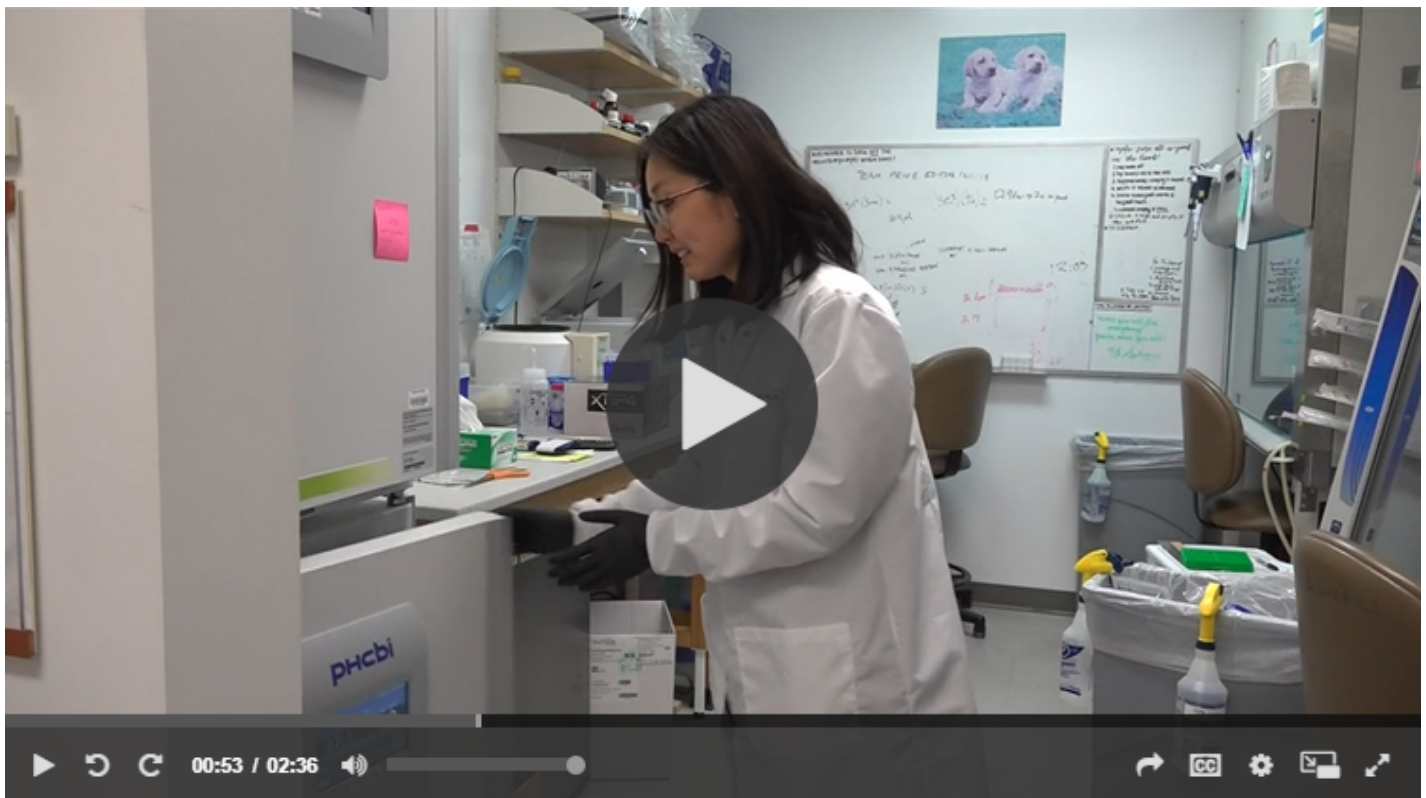
“Based on this patient’s mutations, I believe she will respond to drug X but not Y or Z. But I can’t tell you why.’ That’s not acceptable,” said Ideker.

He says the AI findings will also explain its reasoning and will be confirmed by scientists in their research labs.

“It’s got to be able to have a conversation and defend itself under a panel of experts,” said Ideker,

There is a molecular tumor board that meets to come up with possible treatment options for cancer patients who already failed standard therapies.

This type of AI matching algorithm is applied in daily life. This time it could not only help doctors treat patients better but may also save cancer patients from enduring painful chemo treatments that may not work and give them longer to live.



<https://www.youtube.com/watch?v=ZUcZGHnGv6I>

“Why is it that a patient can get a better recommendation for what movie to watch tonight on Netflix, based on his or her history and characteristics, then they can for which chemo to get. It’s applying some of the same AI matching algorithmics under the hood,” said Ideker.

He says this AI tool still needs further regulatory approval and this could also lead to the development of new drugs and treatments.